

REMARKS

In the Office Action of 5/15/08, the Examiner rejected claims 16-34. In this Response, claims 35-37 have been added. Claims 16-17, 19-26, and 28-37 will be pending after entry of this Response.

Rejection of the Claims Under 35 U.S.C. § 101

In the Office Action, claims 16 - 34 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In rejecting the claims for being directed to non-statutory subject matter, the Examiner asserts that the claims are not limited to practical applications in the technological arts. The Examiner argues, in part, that the claims recite manipulation of abstract “terminological information” and do not produce a “useful, concrete and tangible” result to have a practical application.

The Examiner relies on *In re Warmerdam* and *AT&T Corp. v. Excel Communications, Inc.* In discussing the *In re Warnerdam* opinion, the Federal Circuit, in *AT&T Corp. v. Excel Communications, Inc.*, opinion, concluded:

Whether one agrees with the courts conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions and discoveries that may be patented under 101. *AT&T Corp. v. Excel Communications, Inc.* 50 USPQ2d 1147 (Fed. Cir. 1999).

It is a generally accepted principle that abstract ideas or the mere manipulation of abstract ideas are not patentable (*In re Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759) and that the claimed invention must accomplish a practical application that is a “useful, concrete and tangible result,” (*State Street*, 149 F.3d at 1373, 47 USPQ2d at

1601-02). Applicant submits that the claims of the subject application, however, are not abstract ideas or the mere manipulation of abstract ideas and accomplish a “useful, concrete and tangible result.”

Claim 16 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.” The method includes:

- receiving, into a computer, input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms;

- storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes hierarchically arranged to depict ontological relationships among said nodes, each node representing a term;

- parsing said input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base;

- determining whether at least one input term matches a node in said knowledge base;

- if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships; and

- if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.

Claim 17 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.” The method includes:

- receiving, into a computer, input terminology information comprising a plurality of input terms and relationship information about at least two of said input terms, said relationship information specifying ontological relationships among at least two of said input terms;

- storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes, each node representing a term, and comprising associations among said nodes that depict ontological relationships among respective terms;

- storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base;

generating a logical structure from said relationship information,
said input terms and said mapping that depicts ontological relationships
among said input terms; and
integrating said logical structure of said input terms into said
knowledge base, said integrating comprising:
determining whether at least one input term matches a node
in said knowledge base;
if so, extending said knowledge base by storing data
that logically couples said logical structure of said
ontological relationships to a node that matches an input
term; and
if not, generating a new and independent ontology
for said knowledge base comprising said logical structure
of said ontological relationships.

Independent claim 26 is a computer readable medium claim reciting limitations similar to computer implemented method claim 17.

In response to Applicant's argument in the 10/14/2004 Response to Office Action, the Examiner asserts that the claim term, "terminological information", is a term of variable and vague meaning, and rejects Applicant's examples set forth in the Specification. (1/12/05 Office Action, page 10). In rejecting Applicant's arguments, the Examiner noted that the "claims are to be judged by their limitations."

The claims in the Present Application set forth a definition for the claim term, "terminology information." Independent claims 16, 17 and 26 recite:

input terminology information comprising a plurality of
input terms and information that specifies ontological relationships
among at least two of said input terms.

The terms used in a claim are given their ordinary meaning unless it appears from the patent that the inventor used them differently. *ZMI Corp. v. Cardiac Resuscitator Corp.*, 1844 F.2d 1576, 1578 (Fed. Cir. 1988). It is clear from the claim recitation that "terminology information" connotes terms or words and information that specifies

relationships between the terms or words (*e.g.*, ontological information). As such, claims 16, 17 and 26 ascribe a clear and definite meaning to the “terminology information” claim term.

When interpreting claims, resort should be made to the claims at issue, the specification, and the prosecution history of the patent. *Id.* The Specification provides clear support for a claim interpretation that input terminology connotes terms or words and information that specifies relationships between the terms or words. Table 3 shows example input terminological information formatted in the ISO-2788 format. (*Specification*, page 20, lines 21 – 22). For the example of Table 3, the input terms are “Congress Party of India”, “BJP” and “Bharatiya Janata Party.” The information, which specifies relationships between terms, includes: a Broader Term (“BT”) relationship between “Congress Party of India” and “politics”; a synonym (SYN) relationship between “BJP” and “Bharatiya Janata Party”; a Broader Term (“BT”) relationship between “Bharatiya Janata Party” and “politics”, and a related term (“RT”) relationship between “Bharatiya Janata Party” and “Hinduism.” Applicant is not arguing that the example is part of the claimed invention. Instead, the example provides a context for interpreting the claim limitation. As such, Applicant respectfully contends that the claim limitation, input terminology, has a definite meaning in light of the claims recitation and specification.

The Examiner asserts that the term “terminological information” has a variable and vague meaning and include within its scope purely abstract information, such as philosophical information, mathematical information, etc. (page 5 and 11 of the Office Action). As such, the Examiner argues that the use of the term “terminological

information” in these claims render the claims non-statutory per se since the term is an abstract construct. As established by case law and as stated in the MPEP, however, the mere inclusion of a term that on its own may comprise non-statutory matter does not render the entire claim non-statutory. Rather, the claimed invention as a whole must accomplish a practical application to produce a “useful, concrete and tangible result,” (*State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02). As stated in MPEP 2106, claims define non-statutory subject matter if they:

- consist solely of mathematical operations without some claimed practical application (i.e., executing a “mathematical algorithm”); or
 - simply manipulate abstract ideas, e.g., a bid (*Schrader*, 22 F.3d at 293-94, 30 USPQ2d at 145859) or a bubble hierarchy (*Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759), without some claimed practical application.
- [Emphasis added.]

MPEP 2106 further states that Examiners:

have the burden to establish a prima facie case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101. Compare *Musgrave*, 431 F.2d at 893, 167 USPQ at 289; *In re Foster*, 438 F.2d 1011, 1013, 169 USPQ 99, 101 (CCPA 1971).

[Emphasis added.]

The line of analysis used by the Examiner in rejecting the claims based on inclusion of the term “terminological information” is not consistent with the established case law or the MPEP. As stated above, the Examiner states that since the term “terminological information” can include within its scope abstract information (e.g., philosophical information, mathematical information, etc.), the claims that contain the term are non-statutory subject matter per se. Using this line of reasoning, a claim for a

computer application that receives and processes “information” would be non-statutory subject matter per se since the “information” may include abstract information (e.g., Pi, radians, square root, etc.). Similarly, a claim for a telecommunications system that transmits and receives “information” would also be non-statutory subject matter per se since that “information” may include such abstract information. This type of reasoning is clearly not supported by the case law or the MPEP.

In other words, simply because a claim contains a term that, recited solely on its own is non-statutory, does not automatically render the entire claim non-statutory as well. Applicant agrees that the term “terminological information” recited on its own with no other further limitations is non-statutory subject matter. However, the entirety of a claim must be analyzed to determine if it is non-statutory subject matter rather than a single individual term used in the claim. For purposes of determining non-statutory subject matter under 101, Applicant submits that what scope of information (e.g., philosophical information, mathematical information, etc.) is included in the term “terminological information” is irrelevant in the present claims. Rather, in the present claims, it is the processing steps that are performed on the “terminological information” (whatever that information may or may not include) and whether these steps produce a “useful, concrete and tangible result” that is at issue.

The Examiner argues that the claims provide only a manipulation of an abstract construct (terminology information) and do not produce a “useful, concrete and tangible result.” The mere fact that terminological information may include abstract information does not mean the claims solely recite mere manipulations of abstract information. Using the Examiner’s line of reasoning to the example given above, a claim for a

telecommunications system that transmits and receives information is a mere manipulation of information and non-statutory subject matter since the transmitted and received information may include abstract information. Again, this type of reasoning is clearly not supported by the case law or the MPEP.

Applicant submits that the computer automated reception, analysis, and integration of new terminological information into a knowledge base stored on a computer is, on its face, a “useful, concrete and tangible result,” and thus more than a mere manipulation of the terminological information. In addition, the Specification describes a useful purpose that produces a tangible result from the claimed invention:

The integration of user specified terminological information into a built-in knowledge base has application for use in specific domains. For example, an English language newspaper in India may buy a natural language processing system (e.g., Oracle ConText) to provide search capability for their on-line edition. However, the newspaper may find that the built-in knowledge base has little or no knowledge of Indian politics and economics. For this hypothetical, the user desires to expand the built-in knowledge base to include terminological information on politics and economics.

[Specification, page 20, lines 7 – 14.]

The automated integration of new information into a knowledge base is, in itself, a “useful, concrete and tangible result” and the Specification describes a useful purpose that produces a tangible result from the claimed invention. As such, the Examiner has not met the prima facie burden of establishing that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas (as required by MPEP 2106). According, taken as a whole, the claims of the present invention are of statutory subject matter.

Rejection of the Claims Under 35 U.S.C. § 112, First Paragraph

Claims 16-34 were rejected under 35 USC § 112, First Paragraph, due to the rejection under 35 USC § 101. As stated in the reasons given above, Applicant submits that the rejection under 35 USC § 101 is improper. Also, Applicant has provided sufficient disclosure to one of ordinary skill in the art to practice the invention without undue experimentation. The disclosure includes detailed flow charts, textual description, and examples of the claimed invention. As such, the specification and drawings provide an enabling disclosure for the claimed invention. Therefore, Applicant also submits that the rejection under 35 USC § 112, First Paragraph, is improper.

Rejections under 35 U.S.C. 102

In the Office Action, the Examiner rejected claims 16, 17, and 26 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,061,675 (hereinafter Wical). Applicants respectfully traverse these rejections. Claim 16 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.” The method includes:

receiving, into a computer, input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes hierarchically arranged to depict ontological relationships among said nodes, each node representing a term;

parsing said input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base;

determining whether at least one input term matches a node in said knowledge base;

if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships; and
if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.
[Emphasis added.]

Wical does not disclose, teach, or even suggest each recited feature of claim 16. For example, Wical does not disclose, teach, or even suggest parsing input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base, determining whether at least one input term matches a node in said knowledge base, if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships, and if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.

The Examiner cites column 53, lines 40-57 of Wical as disclosing the “parsing” limitation of claim 16. Column 53, lines 40-57 of Wical discloses:

...The knowledge catalog processor parses the knowledge catalog 100 to compare the content carrying words with the knowledge concepts stored in the static ontologies. If the content carrying word is not contained in at least one domain in the static ontologies, then the word is noted as being not yet understood. If the word is stored more than once in the static ontologies, then the word is classified as ambiguous...

[Emphasis added.]

As such, this portion of Wical does not teach or suggest “parsing” input terminology information to generate a logical structure that depicts ontological relationships among the input terms in a format compatible with a knowledge base, as

required in claim 16. Wical does not teach or suggest “parsing” input terminology information to generate a logical structure that depicts ontological relationships among the input terms. Rather, this portion of Wical discloses that the knowledge catalog 100 is parsed and not the input terminology information. Further, Wical discloses that the knowledge catalog 100 is parsed to compare the content carrying words with the stored knowledge concepts and not to generate a logical structure that depicts ontological relationships among the input terms. Also, Wical does not teach or suggest generating a logical structure that depicts ontological relationships among said input terms in a format compatible with the knowledge base, as required in claim 16. Applicants respectfully request that the Examiner cite the precise portion(s) of Wical that disclose this limitation.

As Wical does not teach or suggest parsing input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base, Wical also does not teach or suggest, if it is determined that an input term does not match a node in the knowledge base, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships, as also required in claim 16. It then further follows that Wical also does not teach or suggest extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term, as also required in claim 16. For the above reasons, Applicants submit that claim 16 is in allowable form.

Amended claim 17 recites, “A computer implemented method for automating integration of terminological information into a knowledge base.” The method includes:

receiving, into a computer, input terminology information
comprising a plurality of input terms and at least one relationship indicator

from a set of predetermined relationship indicators, each relationship indicator specifying an ontological relationship among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes, each node representing a term, and comprising associations among said nodes that depict ontological relationships among respective terms;

generating a logical structure of said input terms from said input terminology information using a mapping table comprising a mapping entry for each relationship indicator in said set of predetermined relationship indicators, each mapping entry comprising a mapping from a relationship indicator to a particular ontological relationship that is in a format compatible with said ontological relationships depicted in said knowledge base; and

integrating said logical structure of said input terms into said knowledge base, said integrating comprising:

determining whether at least one input term matches a node in said knowledge base;

if so, extending said knowledge base by storing data that logically couples said logical structure of said input terms to a node that matches an input term; and

if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said input terms.

[Emphasis added.]

Wical does not disclose, teach, or even suggest each recited feature of claim 17.

For example, Wical does not disclose, teach, or even suggest receiving, into a computer, input terminology information comprising a plurality of input terms and at least one relationship indicator from a set of predetermined relationship indicators, each relationship indicator specifying an ontological relationship among at least two of said input terms; generating a logical structure of said input terms from said input terminology information using a mapping table comprising a mapping entry for each relationship indicator in said set of predetermined relationship indicators, each mapping entry comprising a mapping from a relationship indicator to a particular ontological relationship that is in a format compatible with said ontological relationships depicted in

said knowledge base, and integrating said logical structure of said input terms into said knowledge base.

For the above reasons, Applicants submit that claim 17 is in allowable form. Claims 19-25 are dependent upon claim 17, and thus are allowable for at least the same reasons as claim 17. Independent claim 26 is a computer readable medium claim reciting limitations similar to computer implemented method claim 17. Claims 28-34 are dependent upon claim 26, and thus are allowable for at least the same reasons as claim 26.

Rejection For Double Patenting

On page 25 of the Office Action, claim 16 was rejected for obviousness-type double patenting in view of claim 1 of US Patent 6,654,731. Applicants are assuming this section was included by mistake as a terminal disclaimer was filed on 7/24/07 for US Patent 6,654,731.

CONCLUSION

Based on the foregoing remarks, Applicants believe that the application is in condition for allowance. If the Examiner has any questions regarding the case, the Examiner is invited to contact Applicants' undersigned representative at the number given below.

Respectfully submitted,

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